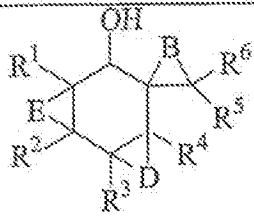
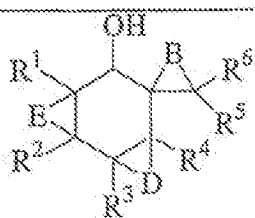


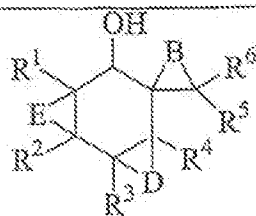
In a particular embodiment of the present invention, the compounds of the formula (V) are the following species:

								
B	D	E	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
O	O	O	Me	H	H	H	Me	Me
O	O	O	<i>i</i> -Pr	H	H	H	Me	Me
O	O	O	Ph	H	H	H	Me	Me
O	O	O	Me	Me	H	H	Me	Me
O	O	O	<i>i</i> -Pr	Me	H	H	Me	Me
O	O	O	Ph	Me	H	H	Me	Me
O	O	O	Me	H	Me	H	Me	Me
O	O	O	<i>i</i> -Pr	H	Me	H	Me	Me
O	O	O	Ph	H	Me	H	Me	Me
O	O	O	Me	H	H	Me	Me	Me
O	O	O	<i>i</i> -Pr	H	H	Me	Me	Me
O	O	O	Ph	H	H	Me	Me	Me
O	O	O	Me	H	CH <sub>2</sub> Ph	H	Me	Me
O	O	O	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
O	O	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	O	O	Me	H	H	H	Me	Me
CH <sub>2</sub>	O	O	<i>i</i> -Pr	H	H	H	Me	Me



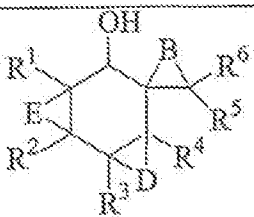
(V)

B	D	E	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
CH <sub>2</sub>	O	O	Ph	H	H	H	Me	Me
CH <sub>2</sub>	O	O	Me	Me	H	H	Me	Me
CH <sub>2</sub>	O	O	<i>i</i> -Pr	Me	H	H	Me	Me
CH <sub>2</sub>	O	O	Ph	Me	H	H	Me	Me
CH <sub>2</sub>	O	O	Me	H	Me	H	Me	Me
CH <sub>2</sub>	O	O	<i>i</i> -Pr	H	Me	H	Me	Me
CH <sub>2</sub>	O	O	Ph	H	Me	H	Me	Me
CH <sub>2</sub>	O	O	Me	H	H	Me	Me	Me
CH <sub>2</sub>	O	O	<i>i</i> -Pr	H	H	Me	Me	Me
CH <sub>2</sub>	O	O	Ph	H	H	Me	Me	Me
CH <sub>2</sub>	O	O	Me	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	O	O	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	O	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Me	H	H	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	<i>i</i> -Pr	H	H	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Ph	H	H	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Me	Me	H	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	<i>i</i> -Pr	Me	H	H	Me	Me



(V)

B	D	E	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
CH <sub>2</sub>	CH <sub>2</sub>	O	Ph	Me	H	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Me	H	Me	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	<i>i</i> -Pr	H	Me	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Ph	H	Me	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Me	H	H	Me	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	<i>i</i> -Pr	H	H	Me	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Ph	H	H	Me	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Me	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	CH <sub>2</sub>	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	Me	H	H	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	<i>i</i> -Pr	H	H	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	Ph	H	H	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	Me	Me	H	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	<i>i</i> -Pr	Me	H	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	Ph	Me	H	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	Me	H	Me	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	<i>i</i> -Pr	H	Me	H	Me	Me

 <p style="text-align: center;">(V)</p>								
B	D	E	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
CH <sub>2</sub>	O	CH <sub>2</sub>	Ph	H	Me	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	Me	H	H	Me	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	<i>i</i> -Pr	H	H	Me	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	Ph	H	H	Me	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	Me	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
CH <sub>2</sub>	O	CH <sub>2</sub>	Ph	H	CH <sub>2</sub> Ph	H	Me	Me

In a sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

5  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S).

10  $R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}$  and  $R^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S).

15

$R_1$  and  $R_2$ ,  $R_2$  and  $R_3$ ,  $R_3$  and  $R_4$ ,  $R_4$  and  $R_5$  and  $R_5$  and  $R_6$  can also each be comprised of one or two  $CR_7R_8$  groups, connected by a tether, selected independently from groups that include  $CR_7R_8$ ,  $CR_7R_8CR_7R_8$ ,  $CR_7=CR_8$ ,  $CR_7R_8O$  and  $CR_7R_8NR_7$ .

5 The dotted line indicates the presence of either a single or double bond;

B is selected from the groups that include  $CR^7R^8$ , O, S or  $NR^7$ ;

G is selected from the groups that include  $OR^7$ ,  $NR^7R^8$  or  $SR^7$ .

10 In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or S).

15  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$  and  $R^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or S);

20  $R_1$  and  $R_2$ ,  $R_2$  and  $R_3$ ,  $R_3$  and  $R_4$ ,  $R_4$  and  $R_5$  and  $R_5$  and  $R_6$  can also each be comprised of one or two  $CR_7R_8$  groups, connected by a tether, selected independently from groups that include  $CR_7R_8$ ,  $CR_7R_8CR_7R_8$ ,  $CR_7=CR_8$ ,  $CR_7R_8O$  and  $CR_7R_8NR_7$ ; and

The dotted line indicates the presence of either a single or double bond;

B is O;

G is  $OR^7$ .

In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S).

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}$  and  $R^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S).

$R_1$  and  $R_2, R_2$  and  $R_3, R_3$  and  $R_4, R_4$  and  $R_5$  and  $R_5$  and  $R_6$  can also each be comprised of one or two  $CR_7R_8$  groups, connected by a tether, selected independently from groups that include  $CR_7R_8, CR_7R_8CR_7R_8, CR_7=CR_8, CR_7R_8O$  and  $CR_7R_8NR_7$ .

The dotted line indicates the presence of either a single or double bond;

B is O;

G is  $NR^7R^8$ .

In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S).

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}$  and  $R^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl,

sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ );

5  $\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ ; and

The dotted line indicates the presence of either a single or double bond;

10 B is O;

G is  $\text{SR}^7$ .

In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

15  $\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ ).

20  $\text{R}^1, \text{R}^2, \text{R}^3, \text{R}^4, \text{R}^5, \text{R}^6, \text{R}^7, \text{R}^8, \text{R}^9, \text{R}^{10}, \text{R}^{12}, \text{R}^{13}, \text{R}^{14}, \text{R}^{15}, \text{R}^{16}, \text{R}^{17}, \text{R}^{18}$  and  $\text{R}^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ ).

25  $\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ .

The dotted line indicates the presence of either a single or double bond;

B is  $\text{CR}^7\text{R}^8$ ;

G is  $\text{OR}^7$ .

5 In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or S);

10  $\text{R}^1, \text{R}^2, \text{R}^3, \text{R}^4, \text{R}^5, \text{R}^6, \text{R}^7, \text{R}^8, \text{R}^9, \text{R}^{10}, \text{R}^{12}, \text{R}^{13}, \text{R}^{14}, \text{R}^{15}, \text{R}^{16}, \text{R}^{17}, \text{R}^{18}$  and  $\text{R}^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or S);

15  $\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}_7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ ; and

The dotted line indicates the presence of either a single or double bond;

B is  $\text{CR}^7\text{R}^8$ ;

G is  $\text{NR}^7\text{R}^8$ .

25 In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,



a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$ ,  $\text{R}^9$ ,  $\text{R}^{10}$ ,  $\text{R}^{12}$ ,  $\text{R}^{13}$ ,  $\text{R}^{14}$ ,  $\text{R}^{15}$ ,  $\text{R}^{16}$ ,  $\text{R}^{17}$ ,  $\text{R}^{18}$  and  $\text{R}^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ ;

The dotted line indicates the presence of either a single or double bond;

B is  $\text{CR}^7\text{R}^8$ ;

G is  $\text{SR}^7$ .

In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$ ,  $\text{R}^9$ ,  $\text{R}^{10}$ ,  $\text{R}^{12}$ ,  $\text{R}^{13}$ ,  $\text{R}^{14}$ ,  $\text{R}^{15}$ ,  $\text{R}^{16}$ ,  $\text{R}^{17}$ ,  $\text{R}^{18}$  and  $\text{R}^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$R_1$  and  $R_2$ ,  $R_2$  and  $R_3$ ,  $R_3$  and  $R_4$ ,  $R_4$  and  $R_5$  and  $R_5$  and  $R_6$  can also each be comprised of one or two  $CR_7R_8$  groups, connected by a tether, selected independently from groups that include  $CR_7R_8$ ,  $CR_7R_8CR_7R_8$ ,  $CR_7=CR_8$ ,  $CR_7R_8O$  and  $CR_7R_8NR_7$ ;

5 The dotted line indicates the presence of either a single or double bond;

B is S;

G is  $OR^7$ .

10 In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or S);

15  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$  and  $R^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or S);

20  $R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

25

The dotted line indicates the presence of either a single or double bond;

B is S;

G is  $NR^7R^8$ .

In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}$  and  $R^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

The dotted line indicates the presence of either a single or double bond;

B is S;

G is  $SR^7$ .

In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}$  and  $R^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl,

sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ );

5  $\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ ;

The dotted line indicates the presence of either a single or double bond;

10 B is  $\text{NR}^7$ ;

G is  $\text{OR}^7$ .

In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

15  $\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ );

20  $\text{R}^1, \text{R}^2, \text{R}^3, \text{R}^4, \text{R}^5, \text{R}^6, \text{R}^7, \text{R}^8, \text{R}^9, \text{R}^{10}, \text{R}^{12}, \text{R}^{13}, \text{R}^{14}, \text{R}^{15}, \text{R}^{16}, \text{R}^{17}, \text{R}^{18}$  and  $\text{R}^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or

25  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ );

$\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ ;

30 The dotted line indicates the presence of either a single or double bond;

B is  $\text{NR}^7$ ;

G is  $\text{NR}^7\text{R}^8$ .

In another sub-embodiment, a structure of the formula (VI) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$\text{R}^1, \text{R}^2, \text{R}^3, \text{R}^4, \text{R}^5, \text{R}^6, \text{R}^7, \text{R}^8, \text{R}^9, \text{R}^{10}, \text{R}^{12}, \text{R}^{13}, \text{R}^{14}, \text{R}^{15}, \text{R}^{16}, \text{R}^{17}, \text{R}^{18}$  and  $\text{R}^{19}$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

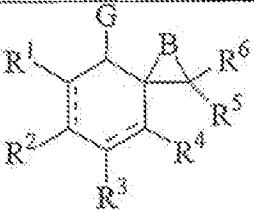
$\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ ;

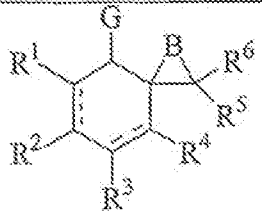
The dotted line indicates the presence of either a single or double bond;

B is  $\text{NR}^7$ ;

G is  $\text{SR}^7$ .

In a particular embodiment of the present invention, the compounds of the formula (VI) are the following species:

 (VD)							
G	B	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
OH	O	Me	H	H	H	Me	Me
OH	O	<i>i</i> -Pr	H	H	H	Me	Me
OH	O	Ph	H	H	H	Me	Me
OH	O	Me	Me	H	H	Me	Me
OH	O	<i>i</i> -Pr	Me	H	H	Me	Me
OH	O	Ph	Me	H	H	Me	Me
OH	O	Me	H	Me	H	Me	Me
OH	O	<i>i</i> -Pr	H	Me	H	Me	Me
OH	O	Ph	H	Me	H	Me	Me
OH	O	Me	H	H	Me	Me	Me
OH	O	<i>i</i> -Pr	H	H	Me	Me	Me
OH	O	Ph	H	H	Me	Me	Me
OH	O	Me	H	CH <sub>2</sub> Ph	H	Me	Me
OH	O	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
OH	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me
OH	CH <sub>2</sub>	Me	H	H	H	Me	Me
OH	CH <sub>2</sub>	<i>i</i> -Pr	H	H	H	Me	Me

 (VI)							
G	B	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
OH	CH <sub>2</sub>	Ph	H	H	H	Me	Me
OH	CH <sub>2</sub>	Me	Me	H	H	Me	Me
OH	CH <sub>2</sub>	<i>i</i> -Pr	Me	H	H	Me	Me
OH	CH <sub>2</sub>	Ph	Me	H	H	Me	Me
OH	CH <sub>2</sub>	Me	H	Me	H	Me	Me
OH	CH <sub>2</sub>	<i>i</i> -Pr	H	Me	H	Me	Me
OH	CH <sub>2</sub>	Ph	H	Me	H	Me	Me
OH	CH <sub>2</sub>	Me	H	H	Me	Me	Me
OH	CH <sub>2</sub>	<i>i</i> -Pr	H	H	Me	Me	Me
OH	CH <sub>2</sub>	Ph	H	H	Me	Me	Me
OH	CH <sub>2</sub>	Me	H	CH <sub>2</sub> Ph	H	Me	Me
OH	CH <sub>2</sub>	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
OH	CH <sub>2</sub>	Ph	H	CH <sub>2</sub> Ph	H	Me	Me

In a sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

5

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ ).

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ ).

$\text{R}_1$  and  $\text{R}_2$ ,  $\text{R}_2$  and  $\text{R}_3$ ,  $\text{R}_3$  and  $\text{R}_4$ ,  $\text{R}_4$  and  $\text{R}_5$  and  $\text{R}_5$  and  $\text{R}_6$  can also each be comprised of one or two  $\text{CR}_7\text{R}_8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}_7\text{R}_8$ ,  $\text{CR}_7\text{R}_8\text{CR}_7\text{R}_8$ ,  $\text{CR}_7=\text{CR}_8$ ,  $\text{CR}_7\text{R}_8\text{O}$  and  $\text{CR}_7\text{R}_8\text{NR}_7$ .

The dotted line indicates the presence of either a single or double bond;

$\text{B}$  is selected from the groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{O}$ ,  $\text{S}$  or  $\text{NR}^7$ ;

$\text{A}$  is selected from the groups that include  $\text{O}$ ,  $\text{NR}^7$  or  $\text{S}$ .

In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ ).

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$\text{R}_1$  and  $\text{R}_2$ ,  $\text{R}_2$  and  $\text{R}_3$ ,  $\text{R}_3$  and  $\text{R}_4$ ,  $\text{R}_4$  and  $\text{R}_5$  and  $\text{R}_5$  and  $\text{R}_6$  can also each be comprised of one or two  $\text{CR}_7\text{R}_8$  groups, connected by a tether, selected



independently from groups that include  $\text{CR}_7\text{R}_8$ ,  $\text{CR}_7\text{R}_8\text{CR}_7\text{R}_8$ ,  $\text{CR}_7=\text{CR}_8$ ,  $\text{CR}_7\text{R}_8\text{O}$  and  $\text{CR}_7\text{R}_8\text{NR}_7$ ; and

The dotted line indicates the presence of either a single or double bond;

B is O;

5 A is O.

In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10  $\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or S).

15  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or S).

20  $\text{R}_1$  and  $\text{R}_2$ ,  $\text{R}_2$  and  $\text{R}_3$ ,  $\text{R}_3$  and  $\text{R}_4$ ,  $\text{R}_4$  and  $\text{R}_5$  and  $\text{R}_5$  and  $\text{R}_6$  can also each be comprised of one or two  $\text{CR}_7\text{R}_8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}_7\text{R}_8$ ,  $\text{CR}_7\text{R}_8\text{CR}_7\text{R}_8$ ,  $\text{CR}_7=\text{CR}_8$ ,  $\text{CR}_7\text{R}_8\text{O}$  and  $\text{CR}_7\text{R}_8\text{NR}_7$ .

The dotted line indicates the presence of either a single or double bond;

B is O;

25 A is  $\text{NR}^7$ .

In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ ).

5  $R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ; and

15 The dotted line indicates the presence of either a single or double bond;

B is O;

A is S.

20 In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ ).

25  $R^2, R^3, R^4, R^5, R^6, R^7$  and  $R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ ).

30

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ .

The dotted line indicates the presence of either a single or double bond;

5 B is  $CR^7R^8$ ;

A is O.

In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

15  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

20  $R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ; and

The dotted line indicates the presence of either a single or double bond;

25 B is  $CR^7R^8$ ;

A is  $NR^7$ .

In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

5  $R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

15 The dotted line indicates the presence of either a single or double bond;

B is  $CR^7R^8$ ;

A is S.

20 In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

25  $R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

30

$R_1$  and  $R_2$ ,  $R_2$  and  $R_3$ ,  $R_3$  and  $R_4$ ,  $R_4$  and  $R_5$  and  $R_5$  and  $R_6$  can also each be comprised of one or two  $CR_7R_8$  groups, connected by a tether, selected independently from groups that include  $CR_7R_8$ ,  $CR_7R_8CR_7R_8$ ,  $CR_7=CR_8$ ,  $CR_7R_8O$  and  $CR_7R_8NR_7$ ;

5 The dotted line indicates the presence of either a single or double bond;

B is S;

A is O.

10 In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or S);

15  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or S);

20  $R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

25 The dotted line indicates the presence of either a single or double bond;

B is S;

A is  $NR^7$ .

In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S);

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S);

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

The dotted line indicates the presence of either a single or double bond;

B is S;

A is S.

In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S);

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester,

alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ );

$\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ ;

The dotted line indicates the presence of either a single or double bond;

B is  $\text{NR}^7$ ;

A is O.

In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ );

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ );

$\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ ;

The dotted line indicates the presence of either a single or double bond;

B is  $\text{NR}^7$ ;

A is  $\text{NR}^7$ .

In another sub-embodiment, a structure of the formula (VII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

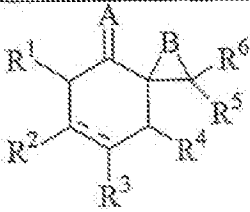
The dotted line indicates the presence of either a single or double bond;

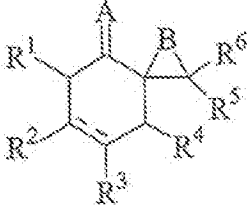
B is  $NR^7$ ;

A is S.



In a particular embodiment of the present invention, the compounds of the formula (VII) are the following species:

 <div style="text-align: right;">(VII)</div>							
A	B	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
O	O	Me	H	H	H	Me	Me
O	O	<i>i</i> -Pr	H	H	H	Me	Me
O	O	Ph	H	H	H	Me	Me
O	O	Me	Me	H	H	Me	Me
O	O	<i>i</i> -Pr	Me	H	H	Me	Me
O	O	Ph	Me	H	H	Me	Me
O	O	Me	H	Me	H	Me	Me
O	O	<i>i</i> -Pr	H	Me	H	Me	Me
O	O	Ph	H	Me	H	Me	Me
O	O	Me	H	H	Me	Me	Me
O	O	<i>i</i> -Pr	H	H	Me	Me	Me
O	O	Ph	H	H	Me	Me	Me
O	O	Me	H	CH <sub>2</sub> Ph	H	Me	Me
O	O	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
O	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me
O	CH <sub>2</sub>	Me	H	H	H	Me	Me
O	CH <sub>2</sub>	<i>i</i> -Pr	H	H	H	Me	Me

 (VII)							
A	B	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
O	CH <sub>2</sub>	Ph	H	H	H	Me	Me
O	CH <sub>2</sub>	Me	Me	H	H	Me	Me
O	CH <sub>2</sub>	<i>i</i> -Pr	Me	H	H	Me	Me
O	CH <sub>2</sub>	Ph	Me	H	H	Me	Me
O	CH <sub>2</sub>	Me	H	Me	H	Me	Me
O	CH <sub>2</sub>	<i>i</i> -Pr	H	Me	H	Me	Me
O	CH <sub>2</sub>	Ph	H	Me	H	Me	Me
O	CH <sub>2</sub>	Me	H	H	Me	Me	Me
O	CH <sub>2</sub>	<i>i</i> -Pr	H	H	Me	Me	Me
O	CH <sub>2</sub>	Ph	H	H	Me	Me	Me
O	CH <sub>2</sub>	Me	H	CH <sub>2</sub> Ph	H	Me	Me
O	CH <sub>2</sub>	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
O	CH <sub>2</sub>	Ph	H	CH <sub>2</sub> Ph	H	Me	Me

In a sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

- 5  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ ).

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ ).

$\text{R}_1$  and  $\text{R}_2$ ,  $\text{R}_2$  and  $\text{R}_3$ ,  $\text{R}_3$  and  $\text{R}_4$ ,  $\text{R}_4$  and  $\text{R}_5$  and  $\text{R}_5$  and  $\text{R}_6$  can also each be comprised of one or two  $\text{CR}_7\text{R}_8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}_7\text{R}_8$ ,  $\text{CR}_7\text{R}_8\text{CR}_7\text{R}_8$ ,  $\text{CR}_7=\text{CR}_8$ ,  $\text{CR}_7\text{R}_8\text{O}$  and  $\text{CR}_7\text{R}_8\text{NR}_7$ .

$\text{E}$  and  $\text{B}$  are selected from the groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{O}$ ,  $\text{S}$  or  $\text{NR}^7$ ;

$\text{G}$  is selected from the groups that include  $\text{OR}^7$ ,  $\text{NR}^7\text{R}^8$  or  $\text{SR}^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ ).

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$\text{R}_1$  and  $\text{R}_2$ ,  $\text{R}_2$  and  $\text{R}_3$ ,  $\text{R}_3$  and  $\text{R}_4$ ,  $\text{R}_4$  and  $\text{R}_5$  and  $\text{R}_5$  and  $\text{R}_6$  can also each be comprised of one or two  $\text{CR}_7\text{R}_8$  groups, connected by a tether, selected

independently from groups that include  $\text{CR}_7\text{R}_8$ ,  $\text{CR}_7\text{R}_8\text{CR}_7\text{R}_8$ ,  $\text{CR}_7=\text{CR}_8$ ,  $\text{CR}_7\text{R}_8\text{O}$  and  $\text{CR}_7\text{R}_8\text{NR}_7$ ; and

$\text{B} = \text{O}$ ,  $\text{E} = \text{O}$  and  $\text{G} = \text{OR}^7$ .

5 In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ ).

10  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ ).

15  $\text{R}_1$  and  $\text{R}_2$ ,  $\text{R}_2$  and  $\text{R}_3$ ,  $\text{R}_3$  and  $\text{R}_4$ ,  $\text{R}_4$  and  $\text{R}_5$  and  $\text{R}_5$  and  $\text{R}_6$  can also each be comprised of one or two  $\text{CR}_7\text{R}_8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}_7\text{R}_8$ ,  $\text{CR}_7\text{R}_8\text{CR}_7\text{R}_8$ ,  $\text{CR}_7=\text{CR}_8$ ,  $\text{CR}_7\text{R}_8\text{O}$  and  $\text{CR}_7\text{R}_8\text{NR}_7$ .

20  $\text{B} = \text{O}$ ,  $\text{E} = \text{NR}^8$  and  $\text{G} = \text{OR}^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

25  $\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ ).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ; and

$B = O, E = CR^7R^8$ , and  $G = OR^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ ).

$R^2, R^3, R^4, R^5, R^6, R^7$  and  $R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ ).

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ .

$B = O, E = S$  and  $G = OR^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S);

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S);

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ; and

$B = O, E = O$  and  $G = NR^7R^8$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S);

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S);

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

5  $B = O$ ,  $E = NR^8$  and  $G = NR^7R^8$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

10  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

15  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

20  $R_1$  and  $R_2$ ,  $R_2$  and  $R_3$ ,  $R_3$  and  $R_4$ ,  $R_4$  and  $R_5$  and  $R_5$  and  $R_6$  can also each be comprised of one or two  $CR_7R_8$  groups, connected by a tether, selected independently from groups that include  $CR_7R_8$ ,  $CR_7R_8CR_7R_8$ ,  $CR_7=CR_8$ ,  $CR_7R_8O$  and  $CR_7R_8NR_7$ ;

$B = O$ ,  $E = CR^7R^8$  and  $G = NR^7R^8$ .

25 In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

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$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R_1$  and  $R_2, R_2$  and  $R_3, R_3$  and  $R_4, R_4$  and  $R_5$  and  $R_5$  and  $R_6$  can also each be comprised of one or two  $CR_7R_8$  groups, connected by a tether, selected independently from groups that include  $CR_7R_8, CR_7R_8CR_7R_8, CR_7=CR_8, CR_7R_8O$  and  $CR_7R_8NR_7$ ;

$B = O, E = S$  and  $G = NR^7R^8$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = CR^7R^8, E = O$  and  $G = OR^7$ .



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$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = CR^7R^8, E = NR^8$  and  $G = OR^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

5  $B = CR^7R^8$ ,  $E = CR^7R^8$  and  $G = OR^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

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15  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

20  $R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = CR^7R^8$ ,  $E = S$  and  $G = OR^7$ .

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$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = CR^7R^8, E = O$  and  $G = NR^7R^8$ .

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$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = CR^7R^8, E = NR^8$  and  $G = NR^7R^8$ .

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$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = CR^7R^8, E = CR^7R^8$  and  $G = NR^7R^8$ .

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$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S);

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

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In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

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15  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

20  $R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = S$ ,  $E = O$  and  $G = OR^7$ .

25 In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^6$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = S, E = NR^6$  and  $G = OR^7$ .

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$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^6$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^6$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = S, E = CR^7R^8$  and  $G = OR^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

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$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = S, E = S$ , and  $G = OR^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

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$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

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20  $R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = S$ ,  $E = NR^8$  and  $G = NR^7R^8$ .

25 In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

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$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = S, E = CR^7R^8$  and  $G = NR^7R^8$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = S, E = S$  and  $G = NR^7R^8$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = NR^7, E = O$  and  $G = OR^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

5  $B = NR^7$ ,  $E = NR^8$  and  $G = OR^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

10  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

15  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

20  $R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = NR^7$ ,  $E = CR^7R^8$  and  $G = OR^7$ .

25 In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

30  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = NR^7, E = S$  and  $G = OR^7$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = NR^7, E = O$  and  $G = NR^7R^8$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = NR^7, E = NR^8$  and  $G = NR^7R^8$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

5  $B = NR^7$ ,  $E = CR^7R^8$  and  $G = NR^7R^8$ .

In another sub-embodiment, a structure of the formula (VIII) is given wherein the compound or its pharmaceutically acceptable salts or prodrug are defined as follows:

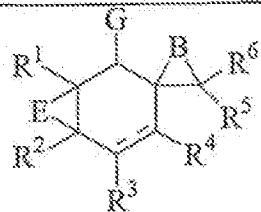
10  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

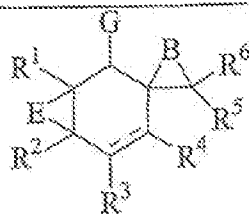
15  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O$ ,  $NR^8$  or  $S$ );

20  $R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8$ ,  $CR^7R^8CR^7R^8$ ,  $CR^7=CR^8$ ,  $CR^7R^8O$  and  $CR^7R^8NR^7$ ;

$B = NR^7$ ,  $E = S$  and  $G = NR^7R^8$ .

In a particular embodiment of the present invention, the compounds of the formula (VIII) are the following species:

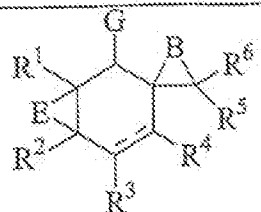
 (VIII)								
G	B	E	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
OH	O	O	Me	H	H	H	Me	Me
OH	O	O	<i>i</i> -Pr	H	H	H	Me	Me
OH	O	O	Ph	H	H	H	Me	Me
OH	O	O	Me	Me	H	H	Me	Me
OH	O	O	<i>i</i> -Pr	Me	H	H	Me	Me
OH	O	O	Ph	Me	H	H	Me	Me
OH	O	O	Me	H	Me	H	Me	Me
OH	O	O	<i>i</i> -Pr	H	Me	H	Me	Me
OH	O	O	Ph	H	Me	H	Me	Me
OH	O	O	Me	H	H	Me	Me	Me
OH	O	O	<i>i</i> -Pr	H	H	Me	Me	Me
OH	O	O	Ph	H	H	Me	Me	Me
OH	O	O	Me	H	CH <sub>2</sub> Ph	H	Me	Me
OH	O	O	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
OH	O	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me
OH	CH <sub>2</sub>	O	Me	H	H	H	Me	Me
OH	CH <sub>2</sub>	O	<i>i</i> -Pr	H	H	H	Me	Me



(VIII)

G	B	E	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
OH	CH <sub>2</sub>	O	Pb	H	H	H	Me	Me
OH	CH <sub>2</sub>	O	Me	Me	H	H	Me	Me
OH	CH <sub>2</sub>	O	<i>i</i> -Pr	Me	H	H	Me	Me
OH	CH <sub>2</sub>	O	Ph	Me	H	H	Me	Me
OH	CH <sub>2</sub>	O	Me	H	Me	H	Me	Me
OH	CH <sub>2</sub>	O	<i>i</i> -Pr	H	Me	H	Me	Me
OH	CH <sub>2</sub>	O	Ph	H	Me	H	Me	Me
OH	CH <sub>2</sub>	O	Me	H	H	Me	Me	Me
OH	CH <sub>2</sub>	O	<i>i</i> -Pr	H	H	Me	Me	Me
OH	CH <sub>2</sub>	O	Ph	H	H	Me	Me	Me
OH	CH <sub>2</sub>	O	Me	H	CH <sub>2</sub> Ph	H	Me	Me
OH	CH <sub>2</sub>	O	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
OH	CH <sub>2</sub>	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me
OH	O	CH <sub>2</sub>	Me	H	H	H	Me	Me
OH	O	CH <sub>2</sub>	<i>i</i> -Pr	H	H	H	Me	Me
OH	O	CH <sub>2</sub>	Ph	H	H	H	Me	Me
OH	O	CH <sub>2</sub>	Me	Me	H	H	Me	Me
OH	O	CH <sub>2</sub>	<i>i</i> -Pr	Me	H	H	Me	Me
OH	O	CH <sub>2</sub>	Ph	Me	H	H	Me	Me



 (VIII)								
G	B	E	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
OH	O	CH <sub>2</sub>	Me	H	Me	H	Me	Me
OH	O	CH <sub>2</sub>	<i>i</i> -Pr	H	Me	H	Me	Me
OH	O	CH <sub>2</sub>	Ph	H	Me	H	Me	Me
OH	O	CH <sub>2</sub>	Me	H	H	Me	Me	Me
OH	O	CH <sub>2</sub>	<i>i</i> -Pr	H	H	Me	Me	Me
OH	O	CH <sub>2</sub>	Ph	H	H	Me	Me	Me
OH	O	CH <sub>2</sub>	Me	H	CH <sub>2</sub> Ph	H	Me	Me
OH	O	CH <sub>2</sub>	<i>i</i> -Pr	H	CH <sub>2</sub> Ph	H	Me	Me
OH	O	CH <sub>2</sub>	Ph	H	CH <sub>2</sub> Ph	H	Me	Me

In a sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

5  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S).

10  $R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester,

alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ ).

$\text{R}_1$  and  $\text{R}_2$ ,  $\text{R}_2$  and  $\text{R}_3$ ,  $\text{R}_3$  and  $\text{R}_4$ ,  $\text{R}_4$  and  $\text{R}_5$  and  $\text{R}_5$  and  $\text{R}_6$  can also each be comprised of one or two  $\text{CR}_7\text{R}_8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}_7\text{R}_8$ ,  $\text{CR}_7\text{R}_8\text{CR}_7\text{R}_8$ ,  $\text{CR}_7=\text{CR}_8$ ,  $\text{CR}_7\text{R}_8\text{O}$  and  $\text{CR}_7\text{R}_8\text{NR}_7$ .

The dotted line indicates the presence of either a single or double bond;

E is selected from the groups that include  $\text{CR}^7\text{R}^8$ , O, S or  $\text{NR}^7$ ;

G is selected from the groups that include  $\text{OR}^7$ ,  $\text{NR}^7\text{R}^8$  or  $\text{SR}^7$ .

In another sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ ).

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ );

$\text{R}_1$  and  $\text{R}_2$ ,  $\text{R}_2$  and  $\text{R}_3$ ,  $\text{R}_3$  and  $\text{R}_4$ ,  $\text{R}_4$  and  $\text{R}_5$  and  $\text{R}_5$  and  $\text{R}_6$  can also each be comprised of one or two  $\text{CR}_7\text{R}_8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}_7\text{R}_8$ ,  $\text{CR}_7\text{R}_8\text{CR}_7\text{R}_8$ ,  $\text{CR}_7=\text{CR}_8$ ,  $\text{CR}_7\text{R}_8\text{O}$  and  $\text{CR}_7\text{R}_8\text{NR}_7$ ; and

The dotted line indicates the presence of either a single or double bond;

E is O;

G is  $\text{OR}^7$ .

In another sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ ).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ ).

$R_1$  and  $R_2, R_2$  and  $R_3, R_3$  and  $R_4, R_4$  and  $R_5$  and  $R_5$  and  $R_6$  can also each be comprised of one or two  $CR_7R_8$  groups, connected by a tether, selected independently from groups that include  $CR_7R_8, CR_7R_8CR_7R_8, CR_7=CR_8, CR_7R_8O$  and  $CR_7R_8NR_7$ .

The dotted line indicates the presence of either a single or double bond;

E is O;

G is  $NR^7R^8$ .

In another sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ ).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl,

heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ );

5  $\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ ; and

The dotted line indicates the presence of either a single or double bond;

10 E is O;

G is  $\text{SR}^7$ .

In another sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

15  $\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ ).

20  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$  and  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}, \text{NR}^8$  or  $\text{S}$ ).

25  $\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ .

The dotted line indicates the presence of either a single or double bond;

E is  $\text{CR}^7\text{R}^8$ ;

G OR<sup>7</sup>.

In another sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

5 R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>7</sup> (X = O, NR<sup>8</sup> or S);

10 R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup> are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>7</sup> (X = O, NR<sup>8</sup> or S);

15 R<sup>1</sup> and R<sup>2</sup>, R<sup>2</sup> and R<sup>3</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>4</sup> and R<sup>5</sup> and R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>7</sup>R<sup>8</sup> groups, connected by a tether, selected independently from groups that include CR<sup>7</sup>R<sup>8</sup>, CR<sup>7</sup>R<sup>8</sup>CR<sup>7</sup>R<sup>8</sup>, CR<sup>7</sup>=CR<sup>8</sup>, CR<sup>7</sup>R<sup>8</sup>O and CR<sup>7</sup>R<sup>8</sup>NR<sup>7</sup>; and

The dotted line indicates the presence of either a single or double bond;

20 E is CR<sup>7</sup>R<sup>8</sup>;

G is NR<sup>7</sup>R<sup>8</sup>.

In another sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

25 R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>7</sup> (X = O, NR<sup>8</sup> or S);

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

The dotted line indicates the presence of either a single or double bond;

E is  $CR^7R^8$ ;

G is  $SR^7$ .

In another sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or  $S$ );

$R_1$  and  $R_2, R_2$  and  $R_3, R_3$  and  $R_4, R_4$  and  $R_5$  and  $R_5$  and  $R_6$  can also each be comprised of one or two  $CR_7R_8$  groups, connected by a tether, selected independently from groups that include  $CR_7R_8, CR_7R_8CR_7R_8, CR_7=CR_8, CR_7R_8O$  and  $CR_7R_8NR_7$ ;

The dotted line indicates the presence of either a single or double bond;

E is S;

G is  $OR^7$ .

5 In another sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S);

15  $R^2, R^3, R^4, R^5, R^6, R^7, R^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^7$  ( $X = O, NR^8$  or S);

20  $R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^7R^8$  groups, connected by a tether, selected independently from groups that include  $CR^7R^8, CR^7R^8CR^7R^8, CR^7=CR^8, CR^7R^8O$  and  $CR^7R^8NR^7$ ;

The dotted line indicates the presence of either a single or double bond;

E is S;

G is  $NR^7R^8$ .

25 In another sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected independently from groups that include  $\text{CR}^7\text{R}^8$ ,  $\text{CR}^7\text{R}^8\text{CR}^7\text{R}^8$ ,  $\text{CR}^7=\text{CR}^8$ ,  $\text{CR}^7\text{R}^8\text{O}$  and  $\text{CR}^7\text{R}^8\text{NR}^7$ ;

The dotted line indicates the presence of either a single or double bond;

E is S;

G is  $\text{SR}^7$ .

In another sub-embodiment, a structure of the formula (IX) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$\text{R}^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  are selected independently from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $\text{XR}^7$  ( $\text{X} = \text{O}$ ,  $\text{NR}^8$  or  $\text{S}$ );

$\text{R}^1$  and  $\text{R}^2$ ,  $\text{R}^2$  and  $\text{R}^3$ ,  $\text{R}^3$  and  $\text{R}^4$ ,  $\text{R}^4$  and  $\text{R}^5$  and  $\text{R}^5$  and  $\text{R}^6$  can also each be comprised of one or two  $\text{CR}^7\text{R}^8$  groups, connected by a tether, selected